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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,120	10/15/2003	Andreas Hadjicostis	24076-3	6775

7590 11/03/2005

Woodard, Emhardt, Moriarty, McNett & Henry LLP  
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EXAMINER
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JAWORSKI, FRANCIS J

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/686,120

Applicant(s)

HADJICOSTIS ET AL.

Examiner

Jaworski Francis J.

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 1-7, 13-20 and 31-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-12 and 21-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/16/03</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: The U.S. Serial Nos. should be provided for the commonly owned applications listed on page 1 of the specification, and their status should be updated as appropriate.

Appropriate correction is required.

Claims 8 – 12 and 21 – 30 are present for examination in this case, having been elected without traverse in the restriction response filed on August 11, 2005.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 – 10, 12, 21 – 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busse et al (US5359760), further in view of Curley et al (US5846205) and Eaton et al (US 5795299). Busse teaches a catheter-based ultrasound array with conductive trace flex circuit substrate and backing and matching layer sections overlying the transducers, see col. 6 line 46 – col. 7 line 32. Since col. 3

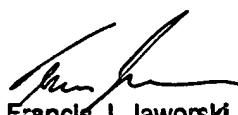
top considered together with col. 7 lower half embraces such transducer installations onto catheters and col. 5 lines 40-41 teaches that the piezo transducer layer mounted in such fashion is itself only a few microns thickness it would have been obvious to fabricate such into an overall device of dimensions of a millimeter range, in consideration of the scale implications for Figs. 3 and 4. Additionally Curley et al teach in col. 2 and col. 6 bottom that such a flex-circuit substrate based catheterarray and matching layers which may include 128 elements for adequate imaging may specifically be designed for intra-cardiac application when reduced in size to the ranges claimed in claims 1-3 therein, see also col. 3 line 38, and coupled to signal processors. Eaton et al incorporates into the rejection since Curley et al in col. 6 lines 34 – 36 incorporates Eaton et al for its catheter flex circuit teachings. The backing layers which absorb backward ultrasound propagation necessarily enlarge usable bandwidth.

Claims 11, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busse et al in view of Curley et al and Eaton et al as applied to claim 8 above, and further in view of Sieben et al (US5243988) since the latter teaches in cols. 27-28 bridging that lead connections must be insulated by layer when delivered as flex circuit traces.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj

20051030

  
Francis J. Jaworski  
Primary Examiner